REMARKS

Claims 1, 3-10 and 12-20 are pending in this application. Claims 1 and 10 are amended to recite "metal portions consisting of a first metal component that is elemental metal." Support for the amendments can be found in the specification at, *inter alia*, page 11, lines 12-25.

Entry is respectfully requested.

The Claims are Patentable under 35 U.S.C. § 103

Claims 1, 3-10, 12-14, and 17-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ando et al (US Patent No. 6,738,203) in view of Nihei et al (US Patent No. 4,692,230) and Ito et al (JP No. 02240292); and

Claims 15-16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ando et al (US Patent No. 6,738,203), Nihei et al (US Patent No. 4,692,230), and Ito et al (JP No. 02240292) as applied to claims 1 and 10 above, and further in view of Yamada et al (US Patent No. 4,954,232).

The Examiner cites Ando et al as disclosing providing a power limiting material being a composite, porous thin film comprising a metal oxide (i.e. second metal) and a transparent additive (i.e. first metal), where both said metal oxide and said transparent additive are deposited via simultaneous or alternate oblique sputtering (citing the abstract; col. 9, lines 51-64; col. 10, lines 59-67). Ando et al is further cited as disclosing that the second metal comprises an oxide selected from Ti, Zn, Nb, In, Sn, Sb, and W (citing col. 2, lines 46-58), while the first metal comprises SiO_2, Al_2O_3, ZrO_2, ZrO, and ZnSe (citing col. 3, lines 39-43). The Examiner concedes that Ando et al is limited in that, while allegedly disclosing sputtering both the first metal and second metal simultaneously, a specific power supply is not suggested.

Nihei et al is further cited as teaching forming an alloy or compound thin film by alternate sputtering targets of different materials (citing the Abstract). The Examiner assumes that Fig. 1 depicts simultaneous sputtering, and a DC pulse power source [1] connected to switching transistors [6], [7] which are connected to targets [4], [5], where said switching transistors [6], [7] can individually turn on and off the power applied to each target (citing col. 2, lines 6-16). The Examiner cites Figs. 2-4 as depicting the target materials comprising either two conductive targets, a conductive target and insulative target, or two insulative targets. Nihei et al states as the advantage of this sputtering the enhanced adhesion among the particles or between the adjacent layers of the composite film (citing col. 1, lines 44-49).

The reason for this aspect of the rejection is that it would have been obvious to use the sputtering apparatus taught by Nihei et al for the oblique sputtering of Ando et al to gain the advantage of enhanced adhesion among the sputtered particles.

The Examiner also concedes that Ando et al is further limited in that it is not suggested to remove portions of the deposited materials. Ito et al is thus cited as teaching obtaining a porous Al alloy material having improved corrosion resistance and insulating properties, where the surface of said Al alloy is cleaned by alkali etching to remove intermetallic compounds (citing abstract).

The reason for this aspect of the rejection is that it would have been obvious to clean the surface Al alloy by alkali etching, as taught by Ito et al, for the sputtered intermetallic composite material of Ando et al, to gain the advantages of superior corrosion resistance and insulating properties.

With respect to claim 9, the Examiner states that modified Ando et al also further discloses a post-treatment performed including a heat treatment (citing col. 11, lines 1-9).

With respect to claims 15-16, the references are cited as discussed for claims 1 and 10 above. However the Examiner concedes that Ando et al does not suggest rotating the substrate. Hence, the Examiner cites Yamada et al's Fig. 7 as depicting two sputter targets [12], [13] composed of different materials and powered by distinct power sources with a substrate capable of rotation to form a combination of films (citing col. 6, lines 55-59).

The reason for the rejection is that it would have been obvious to try rotating a substrate as taught by Yamada et al in an attempt to provide improved film uniformity, as a person with ordinary skill has good reason to pursue the known options within his or her grasp.

Applicants respectfully traverse and amend claims 1 and 10, from which all remaining claims depend, to recite "metal portions consisting of a first metal component that is elemental metal."

Ando discloses in column 4, lines 18-23 that the optical power limiting material is basically characterized by comprising a transparent substrate and oxides of at least one metal selected from the group consisting of Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Nb, Mo, Ru, In, Sn, Sb, Ta, W, Re, Os, I and Bi. However, nowhere does Ando disclose the metal as being simply elemental.

Further, Nihei does not carry out simultaneous sputtering. Rather, Nihei's invention relates to alternative sputtering. Modifying Nihei to operate simultaneously would defeat its intended purpose, which is to provide an alternative to the previously known plural target sputtering methods which are interrupted by a shutter, as opposed to switching electric powers supplied to each target. See Nihei at col. 1; see also MPEP 2142.02 VI, noting that, in combining references, each reference must be considered in its entirety.

Also, Ito et al. is directed to an anodic oxidation of aluminum material with superior corrosion resistance wherein the surface of an Al (alloy) material is cleaned by degreasing with alkali etching and subjected to cathodic electrolysis. However, Ito et al is irrelevant to sputtering. Indeed, Ito et al teaches away from the present invention, including the advantages thereof.

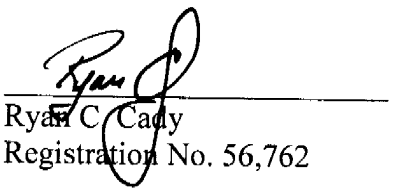
In view of the foregoing, none of Ando et al, Nihei et al or Ito et al, alone or in combination, would have rendered obvious the features claimed. Additionally, as Yamada et al nowhere remedies the deficiencies of Ando et al, Nihei et al and Ito et al with respect to independent claims 1 and 10, claims 15-16 are also patentable at least for the reasons submitted with respect to claims 1 and 10.

Withdrawal of the rejections are earnestly solicited.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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